PATENT APPLICATION
09/905.342

2

CLAIMS

For the convenience of the Examiner, all claims have been presented whether or not an amendment has been made. The claims have been amended as follows:

1. (Currently Amended) A method of detecting a class of viral code, comprising:

heuristically analyzing a subject file to detect at least one class of viral code, the heuristic analysis based at least in part on one or more rules;

identifying at least one new characteristic of a viral code;

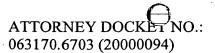
generating at least one new rule, the at least one new rule based at least in part on the at least one new characteristic;

generating to generate a set of flags based at least in part on the heuristic analysis along with statistical information;

using the set of flags with statistical information to perform at least one search for a scan string and/or a statement type in the subject file; and

triggering a positive detection alarm if each of the at least one search is found at least a corresponding predetermined number of times.

- 2. (Original) The method of Claim 1, wherein the subject file includes source code in a predetermined programming language.
- 3. (Original) The method of Claim 2, wherein the predetermined programming language is a script language.
- 4. (Original) The method of Claim 1, wherein the subject file includes a file for a predetermined word processor.
- 5. (Currently Amended) The method of Claim 1, wherein at least one flag in the set of flags corresponds to a copy operation associated with <u>a viral code</u> one of the <u>at least one</u> class of viral code.



PATENT APPLICATION
09/905 342

3

- 6. (Original) The method of Claim 1, wherein at least one flag in the set of flags corresponds to an operation for adding data from a string to a target module.
- 7. (Original) The method of Claim 1, wherein at least one flag in the set of flags corresponds to an operation for importing another code.
- 8. (Original) The method of Claim 1, wherein at least one flag in the set of flags corresponds to an operation for disabling virus protection features in a target application.
- 9. (Original) The method of Claim 1, wherein the searched statement type corresponds to an operation for disabling functionalities in a target application.
- 10. (Previously Presented) The method of Claim 1, wherein the searched statement type corresponds to an operation for overwriting system macros.

ATTORNEY DOCKE 063170.6703 (20000094) PATENT APPLICATION

4

A program storage device readable by a 11. (Currently Amended) machine, tangibly embodying a program of instructions executable by the machine to perform method steps for detecting a class of viral code, the method steps comprising:

heuristically analyzing a subject file to detect at least one class of viral code, the heuristic analysis based at least in part on one or more rules;

identifying at least one new characteristic of a viral code;

generating at least one new rule, the at least one new rule based at least in part on the at least one new characteristic;

generating to generate a set of flags based at least in part on the heuristic analysis along with statistical information;

using the set of flags with statistical information to perform at least one search for a scan string and/or a statement type in the subject file; and

triggering a positive detection alarm if each of the at least one search is found at least a corresponding predetermined number of times.

12. (Currently Amended) A computer system, comprising:

a processor; and

a program storage device readable by the computer system, tangibly embodying a program of instructions executable by the processor to perform method steps for detecting a class of viral code, the method steps comprising:

heuristically analyzing a subject file to detect at least one class of viral code, the heuristic analysis based at least in part on one or more rules;

identifying at least one new characteristic of a viral code;

generating at least one new rule, the at least one new rule based at least in part on the at least one new characteristic;

to-generate generating a set of flags based at least in part on the heuristic analysis along with statistical information;

using the set of flags with statistical information to perform at least one search for a scan string and/or a statement type in the subject file; and

triggering a positive detection alarm if each of the at least one search is found at least a corresponding predetermined number of times.

5

13. (Currently Amended) A computer data signal embodied in a transmission medium which embodies instructions executable by a computer for detecting a class of viral code, comprising:

a first segment including heuristic analyzer code to:

heuristically analyze a subject file to detect at least one class of viral code, the heuristic analysis based at least in part on one or more rules;

identify at least one new characteristic of a viral code;

generate at least one new rule, the at least one new rule based at least in part on the at least one new characteristic;

generate a set of flags based at least in part on the heuristic analysis along with statistical information;

and

a second segment including scanner code using the set of flags with statistical information to perform at least one search for a scan string and/or a statement type in the subject file, and triggering a positive detection alarm if each of the at least one search is found at least a corresponding predetermined number of times.

PATENT APPLICATION
09/905 342

6

14. (Currently Amended) An apparatus for detecting a class of viral code, comprising:

an heuristic analyzer, wherein the heuristic analyzer analyzes comprising:

an heuristic engine operable to:

heuristically analyze a subject file to detect at least one class of viral code, the heuristic analysis based at least in part on one or more rules;

identify at least one new characteristic of a viral code; and generate a set of flags based at least in part on the heuristic analysis along with statistical information;

and

a learning module operable to generate at least one new rule, the at least one new rule based at least in part on the at least one new characteristic; and

- a search component, wherein the search component uses the set of flags with statistical information generated by the heuristic analyzer to perform at least one search for a scan string and/or a statement type in the subject file, and triggers a positive detection alarm if each of the at least one search is found at least a corresponding predetermined number of times.
- 15. (Currently Amended) The apparatus of Claim 14, wherein the heuristic analyzer <u>further comprises a memory module operable to store the one or more rules.</u> is rule-based and comprises a heuristic engine and heuristic rules.
- 16. (Currently Amended) The apparatus of Claim 15, wherein the heuristics heuristic engine is further operable to, using heuristic rules, parses parse the subject file using the one or more rules.
- 17. (Currently Amended) The apparatus of Claim 15, wherein the heuristics one or more rules include sets of heuristic flags stored in a rules table.
- 18. (Original) The apparatus of Claim 14, wherein the search component is rule-based and comprises a search engine and viral code class rules.

ATTORNEY DOCKET NO.: 063170.6703 (20000094)

PATENT APPLICATION
09/905,342

7

- 19. (Original) The apparatus of Claim 14, wherein the search component is a neural network.
- 20. (New) The method of Claim 1, wherein the at least one search is performed using a neural network.